the present remarks, Applicants submit that the rejections have been overcome, and respectfully request reconsideration of the outstanding Office Action and allowance of the present application.

Traversal of Rejection Under 35 U.S.C. § 102(b)

1. *Over Ruf*

Applicants traverse the rejection of claims 1 - 3, 11, 12, 15, 17 - 23, 31, 32, 34, 37 - 42, 44, 46, and 48 - 50 under 35 U.S.C. § 102(b) as being anticipated by RUF et al. (U.S. Patent No. 5,645,689) [hereinafter "RUF"].

Applicants' independent claim 1 recites, *inter alia*, a lamella body having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body, and said downstream lamella end comprising a first surface, a portion coupled to an sloped relative to said first surface, and a second surface, located opposite said first surface, provided with a non-planar surface. Moreover, independent claim 22 recites, *inter alia*, a lamella mounted within said headbox nozzle having a downstream lamella end structured and arranged to be positioned downstream, relative to a suspension flow direction, of an opposite end of said lamella body; and said downstream lamella end comprising a first surface, a portion coupled to and sloped relative to said first surface, and a second surface, located opposite said first surface, provided with a non-planar surface. Applicants' independent claim 44 recites, *inter alia*, a

lamella body having a first and second surface and a mountable end and a downstream end remote from said mountable end, and said downstream end comprising a sloped surface obliquely oriented with respect to and coupled to said first surface and a non-planar surface provided as said second surface.

Applicants note that, while RUF discloses lamellae in a multilayer headbox, RUF fails to provide any disclosure regarding the surfaces of the lamellae, and certainly fails to provide any teaching that the various surfaces of the lamellae are not planar, as recited in the independent claims.

While acknowledging that the lamellae of RUF are formed by a number of surfaces, i.e., parallel surfaces, converging surfaces, and oblique surfaces, as shown in Figures 3 - 8, Applicants submit that RUF provides no disclosure that any of these surfaces are non-planar, and certainly fails to disclose that a second surface, as defined in the pending claims, has a non-planar surface, as recited in at least independent claims 1, 22, and 44.

Moreover, Applicants note that Figure 2 of RUF illustrates a view of the apparatus looking into the nozzle (direction II depicted in Figure 1), in which a constant distance is maintained between the surface of nozzle tips 1 and 1' and lamella 2. Applicants further note that this illustration fails to provide any support for the Examiner's assertion that the lamella surface is not planar.

Because RUF fails to disclose at least the above-noted feature, Applicants submit that

this document fails to disclose each and every recited feature of the instant invention. Thus, Applicants submit that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b) and that the instant rejection should be withdrawn.

Further, Applicants submit that claims 2, 3, 11, 12, 15, 17 - 21, 23, 31, 32, 34, 37 - 42, 46, and 48 - 50 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that RUF fails to anticipate, *inter alia*, the lamella is structured and arranged to be mounted within the headbox nozzle supplying a suspension for forming paper, cardboard or tissue machine, as recited in claim 2; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 3; in combination with the headbox, wherein said lamella is located within the headbox nozzle and the upper nozzle wall in the area of the exit opening is coupled to an adjustable screen, and wherein said sloped portion is positioned toward the adjustable screen, as recited in claim 11; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 12; said lamella has a length that is at least about 80% of the nozzle length, as recited in claim 15; said lamella is structured and arranged to be mounted in a headbox with sectioned consistency control, as recited in

claim 17; said lamella is structured and arranged to be mounted in a headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 18; the stream velocity is more than about 1,800 m/s, as recited in claim 19; said lamella is structured and arranged to be mounted in a multi-layer headbox, as recited in claim 20; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 21; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 23; an adjustable screen coupled to said upper nozzle wall, wherein said sloped portion is positioned toward the adjustable screen, as recited in claim 31; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 32; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 34; said headbox is structured and arranged for sectioned consistency control, as recited in claim 37; said headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 38; the stream velocity is more than about 1,800 m/s, as recited in claim 39; said headbox comprises in a multi-layer headbox, as recited in claim 40; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 41; said lamella is fixedly mounted in said headbox nozzle, as recited in claim 42; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially

rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; the first surface is provided with a non-planar surface, as recited in claim 48; the first surface is provided with a non-planar surface, as recited in claim 49; and the first surface is provided with a non-planar surface, as recited in claim 50.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 1 - 3, 11, 12, 15, 17 - 23, 31, 32, 34, 37 - 42, 44, 46, and 48 - 50 under 35 U.S.C. § 102(b) and indicate that these claims are allowable.

2. *Over Sanford*

Applicants traverse the rejection of claims 1 - 3, 15, 17- 23, 31, 35, 37 - 42, 44, and 48 - 50 under 35 U.S.C. § 102(b) as being anticipated by SANFORD (U.S. Patent No. 4,941,950).

Applicants note that, in contrast to RUF, which was discussed above, SANFORD discloses a grooved trailing element for a headbox. However, Applicants note that the pending claims are not directed solely to non-planar lamellae. Instead, Applicants' independent claims additionally recite, *inter alia*, the downstream lamella end comprises a first surface, *a portion coupled to an sloped relative to said first surface*, and a second surface, located opposite said first surface, provided with a non-planar surface, as recited in at least independent claims 1, 22, and 44.

Applicants note that Figures 7 - 10 of SANFORD illustrate lamellae having converging surfaces 42 and 22, in which both surfaces are grooved surfaces. However, contrary to the expressly recited features of the instant invention, SANFORD fails to disclose the recited sloped or oblique portion coupled to a first surface, as recited in at least independent claims 1, 22, and 44.

Because SANFORD fails to disclose at least the above-noted feature, Applicants submit that this document fails to disclose each and every recited feature of the instant invention. Thus, Applicants submit that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b) and that the instant rejection should be withdrawn.

Further, Applicants submit that claims 2, 3, 15, 17- 21, 23, 31, 35, 37 - 42, and 48 - 50 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that SANFORD fails to anticipate, *inter alia*, the lamella is structured and arranged to be mounted within the headbox nozzle supplying a suspension for forming paper, cardboard or tissue machine, as recited in claim 2; said lamella has a length that is at least about 80% of the nozzle length, as recited in claim 15; said lamella is structured and arranged to be mounted in a headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 18; the stream velocity is more than about 1,800

m/s, as recited in claim 19; said lamella is structured and arranged to be mounted in a multi-layer headbox, as recited in claim 20; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 21; said first surface is structured and arranged to be positioned to face one of the nozzle walls, as recited in claim 23; an adjustable screen coupled to said upper nozzle wall, such that said sloped portion is positioned toward the adjustable screen, as recited in claim 31; wherein said nozzle has a nozzle length and said lamella has a length that is at least about 80% of said nozzle length, as recited in claim 35; said headbox is structured and arranged for sectioned consistency control, as recited in claim 37; said headbox designed for a stream velocity of more than about 1,500 m/s, as recited in claim 38; the stream velocity is more than about 1,800 m/s, as recited in claim 39; said headbox comprises in a multi-layer headbox, as recited in claim 40; said lamella is structured and arranged to be an intermediate lamella, as recited in claim 41; said lamella is fixedly mounted in said headbox nozzle, as recited in claim 42; the first surface is provided with a non-planar surface, as recited in claim 48; the first surface is provided with a non-planar surface, as recited in claim 49; and the first surface is provided with a non-planar surface, as recited in claim 50.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 1 - 3, 15, 17- 23, 31, 35, 37 - 42, 44, and 48 - 50 under 35 U.S.C. § 102(b) and indicate that these claims are allowable.

Traversal of Rejection Under 35 U.S.C. § 103(a)

1. *Over Ruf in view of Sanford*

Applicants traverse the rejection of claims 12, 32, 46, and 51 - 53 under 35 U.S.C. § 103(a) as being unpatentable over RUF in view of SANFORD. The Examiner asserts that, while RUF does not disclose a grooved surface, it would have been obvious to include such a surface in view of the disclosure of SANFORD.

Applicants again refer the Examiner to Figure 2 of RUF, as well as the accompanying text. In particular, Applicants note that RUF discloses that tip t should be as exactly straight-lined as possible from side wall to side wall, i.e., it should be as close as possible to parallel to the outlet ends, see RUF, column 4, lines 16 - 23.

Because RUF expressly discloses that the surfaces should be parallel in order to obtain the desired operation of the headbox, Applicants submit that the modification asserted by the Examiner is contrary to the express disclosure of RUF. That is, because SANFORD discloses a lamella having two grooved surfaces, Applicants submit that the asserted modification would be contrary to the express intention of RUF that tip t to be as exactly straight-lined as possible.

Applicants note that this arrangement is enables RUF to operate in its desired manner, and there is no teaching or suggestion that utilizing a grooved surfaced lamella would enable to RUF to continue operating as intended. Thus, Applicants submit that the art of record fails

to provide the requisite motivation or rationale for combining the art of record in the manner asserted by the Examiner. In particular, as the asserted combination appears to be contrary to express disclosure of RUF, Applicants submit that the instant rejection is improper and should be withdrawn.

Thus, Applicant submit that, as the art of record fails to teach or suggest the asserted modification of RUF in view of SANFORD, no proper combination of the applied documents can render unpatentable the invention recited in at least independent claims 1, 22, and 44. Moreover, Applicants submit that claims 12, 32, 46, and 51 - 53 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits that no proper modification of RUF in view of SANFORD teaches or suggests, *inter alia*, said non-planar surface comprises grooves having at least one of (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 12; said non-planar surface comprises grooves having at least one of (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 32; said non-planar surface comprises grooves having at least one of (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; said non-

planar surface comprises a grooved surface, as recited in claim 51; said non-planar surface comprises a grooved surface, as recited in claim 52; and said non-planar surface comprises a grooved surface, as recited in claim 53.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 12, 32, 46, and 51 - 53 under 35 U.S.C. § 103(a) and indicate that these claims are allowable.

2. *Over Ruf or Sanford*

Applicants traverse the rejection of claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 under 35 U.S.C. § 103(a) as being unpatentable over RUF or SANFORD. The Examiner asserts that the features recited in the instant claims are merely obvious design variants of the lamellae of RUF and/or SANFORD.

With regard to RUF, Applicants note that RUF fails to provide any teaching or suggestion that would lead one ordinarily skilled in the art to utilize non-planar second lamella surface, as recited in at least independent claims. In particular, as RUF specifically discloses that it is intended that tip t of the lamella be as exactly straight-lined as possible from side wall to side wall, Applicants submit that there is no suggestion regarding a non-planar second surface, as recited in the instant invention.

Regarding SANFORD, Applicants note that the grooves formed in the surfaces are utilized to achieve the desired operation of the headbox, and there is no teaching or

suggestion that forming an additional lamella surface obliquely to a first surface would enable SANFORD to continue operating in its intended manner. That is, SANFORD discloses a specific arrangement of grooves on opposing sides of a lamella, but there is no teaching or suggestion as to how suspension flow over these surfaces would be changed/disrupted due to adding an additional oblique surface to the lamella.

Further, Applicants note that the lamellae of the instant invention is structured so as to avoid instabilities in flow conditions and to avoid a tendencies to oscillate. Applicants note that, as neither RUF nor SANFORD identify the problem to be addressed by the instant invention, Applicants submit that it would not have been obvious to modify these documents in the manner asserted by the Examiner. Moreover, because neither applied document provides any suggestion as to what might be expected from modifying the lamellae from the respective documents in the manner asserted by the Examiner, Applicants submit that these documents cannot render obvious the instant invention.

Thus, Applicants submit that neither RUF nor SANFORD provides any teaching or suggestion that would render the instant invention obvious. Moreover, Applicants submit that neither applied document of record provides the necessary motivation or rationale for modification in the manner asserted by the Examiner.

Thus, Applicant submit that, as both RUF and SANFORD fail to teach or suggest the combination of features recited in at least independent claims 1, 22, and 44, these documents

fail to render the instant invention unpatentable. Moreover, Applicants submit that claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicant submits that no proper modification of either RUF or SANFORD teaches or suggests, *inter alia*, said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface, as recited in claim 4; said angle is between about 2.5° to 5°, as recited in claim 5; said downstream lamella end has a height of between about 0.3 mm and 1.0 mm, as recited in claim 6; the height is between about 0.4 mm and 0.6 mm, as recited in claim 7; said height is determined from a distance between an end of said sloped portion and said second surface, as recited in claim 8; said lamella has a predominant lamella thickness of between about 2 mm and 6 mm, as recited in claim 9; said predominant thickness is about 4 mm, as recited in claim 10; said lamella is composed of at least one high-performance polymer, as recited in claim 13; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 14; in combination with the headbox, wherein a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about 3 m/s, as recited in claim 16; said sloped portion is oriented at an angle of between about 1.5° to 6° to said first surface, as recited in claim 24; said angle is between about 2.5° to 5°, as recited

in claim 25; said downstream lamella end has a height of between about 0.4 mm and 0.6 mm, as recited in claim 26; the height is about 0.5 mm, as recited in claim 27; said height is determined from a distance between an end of said sloped portion and said second surface, as recited in claim 28; said lamella has a predominant lamella thickness of between about 2 mm and 6 mm, as recited in claim 29; said predominant thickness is about 4 mm, as recited in claim 30; said lamella is composed of at least one high-performance polymer, as recited in claim 33; said high-performance polymer comprises at least one of a polyphenylene sulfone (PPSU), a polyethersulfone (PES), a polyetherimide (PEI) or a polysulfone (PSU), as recited in claim 34; a flow velocity of the fibrous suspension in the area of said downstream lamella end is within a range of more than about 3 m/s, as recited in claim 36; wherein said lamella is pivotably mounted in said headbox nozzle, as recited in claim 43; said sloped surface is obliquely oriented relative to said first surface at an angle of between about 1.5° to 6° to said first surface, as recited in claim 45; said non-planar surface comprises grooves having at least one of: (A) at least one of essentially rectangular, wedge-shaped, parabolic, and essentially round structure, (B) varying depth, and (C) varying spacing, as recited in claim 46; and said downstream lamella end has a height, determined from a distance between an end of said sloped portion and said second surface, of between about 0.4 mm and 0.6 mm, as recited in claim 47.

Accordingly, Applicants request that the Examiner reconsider and withdraw the

rejection of claims 4 - 10, 13, 14, 16, 24 - 30, 33, 34, 36, 43, and 45 - 47 under 35 U.S.C. § 103(a) and indicate that these claims are allowable.

Application is Allowable

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

Authorization to Charge Deposit Account

The Commissioner is authorized to charge to Deposit Account No. 19 - 0089 any necessary fees, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, in order to maintain pendency of this application.

CONCLUSION

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 1 - 53. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to

be appropriate.

Respectfully submitted,
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